CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No: CTCE/BBMP/KRIDL/W.No.13/BM/Sp_Wa/2018-19 26.04.2018

TEST REEPORT ON SPECIFIC GRAVITY AND WATER ABSORPTION

* Customer	:	**Asst. Executive Engineer,** Dasarahalli Project Division, BBMP, Bangalore.
* Agency	:	**Technical Manager,** KRIDL, Bangalore.
* Name of Work	:	Improvements of asphalting at Kalyana Nagara and surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/PD/WO/000032/2017-18 Dated: 22.02.2018
Technical reference	:	IS : 2386(Part -3)-1963 (RA-2011)
* Type of Mix	:	Bituminous Macadam
Date of Testing	:	26.04.2018

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 2	
1	Weight of aggregate suspended in water with the basket	W_1 g	2025	2022	2023	
2	Weight of basket suspended in water	W_2 g	750	750	750	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1275	1272	1273	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2017	2014	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	740	745	741	
6	Weight of oven dried aggregate	W_4 g	2004	2007	2005	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.708	2.694	2.706	2.707
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.749	2.731	2.739	2.744
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.55%	0.50%	0.45%	0.50%

*Information is furnished by the Customer/Representative.

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Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Macadam is 2.0%

Note:

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⇒Any Query regarding the report must be reported within 30 days from the date of testing.

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Job No.: CTCE/BBMP/KRIDL/W.No.13/BM/Bitumen/2018-19 26.04.2018

TEST REPORT ON BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

* Customer	:	**Asst. Executive Engineer,** Dasarahalli Project Division, BBMP, Bangalore.
* Agency	:	**Technical Manager,** KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Kalyana Nagara and surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/PD/WO/000032/2017-18 Dated: 22.02.2018
* Sample ID	:	Roads at Kalyana Nagara area Ward No.13
Technical Reference	:	IRC:SP:11-1984
Date of Testing	:	26.04.2018

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482	481.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	18	18.50
7. Bitumen content in %	3.60	3.70
8. Average	3.65	

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Job No.: CTCE/BBMP/KRIDL/W.No.13/BM/Gradation/2018-19 26.04.2018

TEST REPORT ON GRADATION OF BITUMINOUS MACADAM MIX

* Customer	:	Asst. Executive Engineer, Dasarahalli Project Division, BBMP, Bangalore.
* Agency	:	Technical Manager, KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Kalyana Nagara and surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/PD/WO/000032/2017-18 Dated: 22.02.2018
* Sample ID	:	Roads at Kalyana Nagara area Ward No.13
Technical Reference	:	IS:2386 and IRC:SP:11-1984
Date of Testing	:	26.04.2018

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	35.24	7.31	7.31	92.69	90-100
13.2	81.56	16.92	24.23	75.77	56-88
4.75	253.6	52.61	76.85	23.15	16-36
2.36	55.47	11.51	88.35	11.65	4-19
0.3	15.82	3.28	91.64	8.36	2-10
0.075	11.45	2.38	94.01	5.99	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0.00	100	100
19	31.56	6.55	6.55	93.45	90-100
13.2	82.47	17.13	23.68	76.32	56-88
4.75	253.6	52.67	76.35	23.65	16-36
2.36	49.85	10.35	86.70	13.30	4-19
0.3	26.28	5.46	92.16	7.84	2-10
0.075	5.42	1.13	93.29	6.71	0-8

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Job No: CTCE/BBMP/KRIDL/W.No.13/BM/Agg.G/2018-19 26.04.2018

TEST REPORT ON GRADATION OF AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Dasarahalli Project Division, BBMP, Bangalore.
* Agency	:	**Technical Manager,** KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Kalyana Nagara and surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/PD/WO/000032/2017-18 Dated: 22.02.2018
* Sample ID	:	Hot Mix Plant, Bangalore
Technical Reference	:	IS : 2386(Part -1)-1963 (RA-2011)
* Type of Mix	:	Bituminous Macadam
Date of Testing	:	26.04.2018

Total Weight of Sample: **5200** gm

Sieve Size, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade II MORTH Table 500-4 specification
19	375	7.21	7.21	92.79	90-100	
13.2	1565	30.10	37.31	62.69	56-88	
4.75	1640	31.54	68.85	31.15	16-36	
2.36	955	18.37	87.21	12.79	4-19	
0.3	245	4.71	91.92	8.08	2-10	
0.075	127	2.44	94.37	5.63	0-8	

Total Weight of Sample: **5250** gm

Sieve Size, mm	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	Grade-II As per MORTH	Remarks
26.5	0	0	0	100	100	Gradation satisfies Grade II MORTH Table 500-4 specification
19	325	6.19	6.19	93.81	90-100	
13.2	1540	29.33	35.52	64.48	56-88	
4.75	1637	31.18	66.70	33.30	16-36	
2.36	925	17.62	84.32	15.68	4-19	
0.3	530	10.10	94.42	5.58	2-10	
0.075	118	2.25	96.67	3.33	0-8	

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